REMARKS

Claims 2-4, 6-10, 15-20 and 23-42 remain in the application. Claims 1, 5 and 11-14, and 21-22 were previously canceled without prejudice.

Claim Rejections--35 USC 103(a)

A.   Rejection of claims 2-4, 6-9, 15-17, 25-31, 33-34 and 36 under 35 USC 103(a) as being unpatentable over Lee 1 (US 6,539,060) in view of Lee 2 (US 5,877,813).

Claims 2-4, 6-9, 15-17, 25-31, 33-34 and 36 were rejected under 35 USC 103(a) as being unpatentable over Lee 1 (US 6,539,060) in view of Lee 2 (US 5,877,813). This rejection is respectfully traversed.

Claim 2 recites as follows.

2.   A method of processing all or a portion of a multi-dimensional signal with a domain composed of a collection of arbitrarily shaped domains via a multi-scale transform comprising the steps of:

   a. Obtaining a multi-dimensional digital image frame;

   b. Breaking the image frame into constituent arbitrary shaped domains, or given such a set, that cover all or a portion of the original multi-dimensional signal domain; and

   c. **Performing a combined domain and pattern adaptive transform** on one or more of the collection of arbitrary shaped domains, wherein a filter comprising a convolution operator is applied to process pixels near a boundary of the domain, and **wherein filter coefficients for an**

interpolation filter are scaled by an inverse of a gradient value.

(Emphasis added.)

As shown above, claim 2 recites as follows. "**Performing a combined domain and pattern adaptive transform** on one or more of the collection of arbitrary shaped domains, wherein a filter comprising a convolution operator is applied to process pixels near a boundary of the domain, and **wherein filter coefficients for an interpolation filter are scaled by an inverse of a gradient value.**" (Emphasis added.) This claim language is supported in the original specification on pages 30 and 31 which discloses pattern adaptive transforms and combining a pattern adaptive transform with a domain adaptive transform. In particular, page 30, lines 25-26 recites, "Each of the filter coefficients is then scaled by the inverse of the gradient value."

In regard to Lee 1, the latest office action states, "Lee 1 does not clearly teach an inverse of a gradient value ...." (Page 5, line 16.) Applicants agree that Lee 1 does not teach or suggest the above-recited element claim 2.

The applicants respectfully disagree with the Examiner's interpretation of Lee 2 as curing the deficiencies of Lee 1 in regard to claim 2. In particular, for the reasons discussed below, Lee 2 does not disclose or teach the claim limitation of "wherein **filter coefficients** for an interpolation filter are scaled by an inverse of a gradient value."

The latest office action asserts that σ_n **and** m_n in equations (2)-(4) of Lee 2 are filter coefficients. (Latest office action, page 2, lines 15-16, "filter coefficients,

σ_n and m_n, computed in fig. 2:40…" and page 6, line 10, "wherein filter coefficients

(σ_n and m_n in equation (2) in column 4) for an interpolation filter (fig. 2: AVERAGE

FILTER) …." However, this assertion is directly and expressly contradicted by the

actual disclosure of Lee 2.

In particular, Lee 2 expressly states, "m_n and σ_n represent a mean value

and a standard deviation of an n-th 8x8 block of the gradient image …." Hence,

Lee 2 expressly states that m_n and σ_n represent a **mean value** and a **standard

deviation**, respectively, of an n-th 8x8 block of a gradient image. The Examiner

supplies <u>no</u> explanation as to how a mean value and a standard deviation in Lee 2

reads upon the claimed filter coefficients. One of ordinary skill in the art clearly

knows that mean values are technically distinct from filter coefficients. One of

ordinary skill in the art also clearly knows that standard deviations are technically

distinct from filter coefficients.

The latest office action also continues to assert that the "denominator in

equation (2)" (emphasis added) of Lee 2 as somehow being relevant to the

claimed filter coefficients. However, this assertion is also directly and expressly

contradicted by the actual disclosure of Lee 2.

As previously pointed out by applicants, Lee 2 explicitly defines equation (2)

as representing a **local threshold value**, T_n. The Examiner supplies <u>no</u>

explanation as to how a local threshold value in Lee 2 reads upon the claimed filter

coefficients. One of ordinary skill in the art clearly knows that local threshold

values are technically distinct from filter coefficients.

The latest office action further asserts that the average filter 70 in FIG. 2 of Lee 2 corresponds to the claimed interpolation filter. However, applicants respectfully point out that the above-discussed local threshold value of equations (2)-(4) are applied by the local edge mapper 40 in Lee 2, <u>not</u> by the average filter 70. The average filter 70 is clearly shown to be a separate and distinct component from the local edge mapper 40. There is <u>no</u> disclosure or suggestion in Lee 2 that the average filter 70 applies equations (2)-(4).

Therefore, for one or more of the above-discussed reasons, applicants respectfully submit that claim 2 overcomes its rejection.

Dependent claims 6-9, 15-17, 25-31, 33-34 and 36 depend from claim 2. Therefore, these claims also overcome their rejections for at least the same reasons as given in regard to claim 2.

Similar to claim 2, amended claim 3 recites "Performing a combined domain and pattern adaptive transform ... wherein filter coefficients for an interpolation filter are scaled by an inverse of a gradient value." Therefore, applicants respectfully submit that claim 3 now overcomes this rejection for at least the reasons discussed above in relation to claim 2.

Similar to claim 2, amended claim 4 recites "Performing a combined domain and pattern adaptive transform ... wherein filter coefficients for an interpolation filter are scaled by an inverse of a gradient value." Therefore, applicants respectfully submit that claim 4 now overcomes this rejection for at least the reasons discussed above in relation to claim 2.

B.   Rejection of claim 10 under 35 USC 103(a) as being unpatentable over Lee 1 in view of Lee 2 and further in view of Lei et al. (US 6,356.665).

Claim 10 was rejected under 35 USC 103(a) as being unpatentable over Lee 1 in view of Lee 2 and further in view of Lei et al. (US 6,356.665).   This rejection is respectfully traversed.

Claim 10 depends from claim 2. Lei et al. does <u>not</u> cure the deficiencies of Lee 1 and Lee 2 that are discussed above in relation to claim 2. Therefore, claim 10 also overcomes its rejection for at least the same reasons as given in regard to claim 2.

C.   Rejection of claims 18 and 35 under 35 USC 103(a) as being unpatentable over Lee 1 in view of Lee 2 and further in view of Ostermann (US 5,646,689).

Claims 18 and 35 were rejected under 35 USC 103(a) as being unpatentable over Lee 1 in view of Lee 2 and further in view of Ostermann (US 5,646,689).   This rejection is respectfully traversed.

Claims 18 and 35 depends from claim 2. Ostermann does <u>not</u> cure the deficiencies of Lee 1 and Lee 2 that are discussed above in relation to claim 2. Therefore, claims 18 and 35 also overcome their rejection for at least the same reasons as given in regard to claim 2.

D. **Rejection of claims 19, 20 and 23-24 were rejected under 35 USC 103(a) being unpatentable over Lee 1 in view of Lee 2 and further in view of Etoh (US 5,859,932).**

Claims 19, 20 and 23-24 were rejected under 35 USC 103(a) being unpatentable over Lee 1 in view of Lee 2 and further in view of Etoh (US 5,859,932). This rejection is respectfully traversed.

Claims 19, 20 and 23-24 depend from claim 2. Etoh does <u>not</u> cure the deficiencies of Lee 1 and Lee 2 that are discussed above in relation to claim 2. Therefore, claims 19, 20 and 23-24 also overcome their rejection for at least the same reasons as given in regard to claim 2.

E. **Rejection of claims 32 and 37-42 under 35 USC 103(a) being unpatentable over Lee 1 in view of Lee 2 and further in view of Avinash (US 6,757,442).**

Claims 32 and 37-42 were rejected under 35 USC 103(a) being unpatentable over Lee 1 in view of Lee 2 and further in view of Avinash (US 6,757,442). This rejection is respectfully traversed.

Claims 32 and 37-42 depend from claim 2. Avinash does <u>not</u> cure the deficiencies of Lee 1 and Lee 2 that are discussed above in relation to claim 2. Therefore, claims 32 and 37-42 also overcome their rejection for at least the same reasons as given in regard to claim 2.

Conclusion

For the above discussed reasons, applicants respectfully submit that claims 2-4, 6-10, 15-20 and 23-42 overcome the rejections in the latest office action.

The Examiner is invited to call the undersigned for any questions. Favorable action is respectfully solicited.

Respectfully submitted,

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